DOCUMENT RESUME

ED 042 429 24 HE 001 759

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TITLE	Data Element Dictionary: Course. A Technical Report Concerning Course Related Data Elements in the WICHE Management Information Systems Program. First Edition.
INSTITUTION	Western Interstate Commission for Higher Education, Boulder, Colo.
SPONS AGENCY	Department of Health, Education, and Welfare, Washington, D.C. National Center for Educational Research and Development.
REPORT NO	Tech-R-11
BUREAU NO	BR-8-0708
PUB DATE	May 70
CONTRACT	OEC-0-8-980708-4533 (010)
NOTE	22p.
EDRS PRICE	EDRS Price MF-$0.25 HC-$1.20
DESCRIPTORS	*Courses, Data, *Data Bases, Data Collection, Dictionaries, *Higher Education, *Information Systems, *Management Systems, Systems Analysis
IDENTIFIERS	*Management Information Systems Program

ABSTRACT

This document is one of the 5 sections of the Data Element Dictionary developed as part of the WICHE Management Information Systems (MIS) Program. The elements in this section apply to both the current and historical data concerning courses. The purpose of the WICHE MIS Program is to make it possible to derive data which will be truly comparable for interinstitutional comparisons, while allowing institutional autonomy in such matters as coding and file structure. One of the major purposes of this section of the Dictionary is to obtain longitudinal data depicting changes in characteristics over a period of time. The criteria for inclusion of data elements are: (1) necessary for completion of the Higher Education General Information Survey (HEGIS); (2) likely to be needed for cost exchange procedures, the Student Flow Model, and the Resource Requirements Prediction Model; (3) necessary to link operational files together for the derivation of information; and (4) basic to institutional record keeping. The 4 categories of course-related elements are: course identifiers, course attributes, section attributes. To define each data element, the Dictionary provides a number title, description, and comments needed for further clarification. After review of this edition, a second is planned. (AF)

ED042429

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. . . to increase educational opportunities for westerners.
. . . to expand the supply of specialized manpower in the West.
. . . to help universities and colleges improve both their programs and their management.
. . . to inform the public about the needs of higher education.

The WICHE Management Information Systems Program was proposed by state coordinating agencies and colleges and universities in the West to be under the aegis of the Western Interstate Commission for Higher Education. The MIS Program proposes in summary:

To design, develop, and encourage the implementation of management information systems and data bases including common data elements in institutions and agencies of higher education that will:

- provide improved information to higher education administration at all levels.
- facilitate exchange of comparable data among institutions.
- facilitate reporting of comparable information at the state and national levels.

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HE 001 252

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BR 8-0708

DATA ELEMENT DICTIONARY: COURSE

A Technical Report Concerning Course Related Data Elements in the WICHE Management Information Systems Program

FIRST EDITION

Technical Report 11

Prepared by
Charles R. Thomas

in cooperation with

Members of the Data Elements Task Force

The WICHE Management Information Systems Program is supported by the U. S. Office of Education, Bureau of Research, Division of Higher Education Research.

Western Interstate Commission for Higher Education
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May 1970

HE 001 754

DATA ELEMENT DICTIONARY

Course Related Elements Section

FIRST EDITION

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INTRODUCTION

This document is the first edition of the Course Related Elements Section of the DATA ELEMENT DICTIONARY developed as part of the WICHE Management Information Systems Program. The elements in this section apply to both current and historical data concerning courses.

The foundation of the WICHE MIS Program will be a body of uniform data elements which all participating institutions will use to some degree in building their data base. Compatibility of information exchanged across institutional lines can be achieved only with uniformity of the data elements from which all subsequent data and information will be derived. Hence, identification of the discrete data elements which will be incorporated in the data bases of institutions participating in the WICHE MIS Program is an early developmental task of major importance.

The Course Related Elements Section of the DATA ELEMENT DICTIONARY is the fourth of five sections which will be included in the total Dictionary. In order to place the Course Related Elements Section in its proper perspective, all of the DATA ELEMENT DICTIONARY Sections are listed below.

I: Student Elements
II: Staff Related Elements
III: Facilities Related Elements
IV: Course Related Elements
V: Finance Related Elements

Earlier publications indicated a sixth section dealing with data elements related to major equipment. This section has been incorporated into the Facilities Related Elements Section. This Course Related Elements Section was previously referred to as the Curricular Related Elements Section.

The five sections of the DATA ELEMENT DICTIONARY are not intended to represent specific institutional files. Appendix B contains further comments on file structures.

The Course Related Data Elements presented in this first edition are not fixed. It is anticipated that as analytical models and formulae are constructed for use in the WICHE Management Information Systems Program, additional data elements may be needed, and some of those now identified may be eliminated from the list. The data base and the analytical models are inextricably linked together and neither the data base nor the models can be made independent of one another. It is reasonably safe, however, to assume that most of the Course Related Elements listed in the first edition will remain in future editions of the DATA ELEMENT DICTIONARY.

This edition of the DATA ELEMENT DICTIONARY presents definitions of data elements important to the development of the WICHE MIS Program. Derived data elements have not been included when the basic elements used to compute the derived element are present. The criteria for inclusion of data elements are:

1. Necessary for completion of the Higher Education General Information Survey (HEGIS).
2. Likely to be needed for Cost Exchange Procedures.
3. Likely to be needed for the Student Flow Model.
4. Likely to be needed for the Resource Requirements Prediction Model.
5. Necessary to link operational files together for the derivation of information.
6. Basic to institutional record keeping.

The Course Related Elements identified in this publication are not intended as a complete list of all data elements an institution will need

for its management and reporting purposes. Most colleges and universities will have unique management information needs which will require unique data elements. Further, routine operations of institutions will require data elements not included in this Dictionary. No data element dictionary can be expected to provide a list of items which would be exhaustive in the context of unique needs of institutions. Therefore, most institutions will be able to identify Course Related Data Elements, in addition to those listed in the Dictionary, which they would wish to or must collect for their own purposes.

A second edition of the DATA ELEMENT DICTIONARY is planned. This second edition will incorporate changes resulting from (1) reactions by the higher education community to the first edition, (2) early experience with WICHE MIS Models, and (3) additional efforts by the MIS Staff in the area of higher education information systems. The second edition will also be expanded to include technical information such as suggested code structures, detailed category definitions and programming aids.

Dictionary Organization and Format

The Course Related Elements identified in this section of the DATA ELEMENT DICTIONARY have been grouped into four categories for convenient examination. The numbers attached to the elements are intended only to facilitate identification and location of the elements and have no implication for standard coding practices. Also, the lettered categories indicated for elements are not intended to imply any coding structures. The four categories of Course Related Elements are:

1. 000-009 COURSE IDENTIFIERS
2. 100-199 COURSE ATTRIBUTES
3. 200-299 SECTION IDENTIFIERS
4. 300-399 SECTION ATTRIBUTES

Although the DATA ELEMENT DICTIONARY deals with elementary data items, certain data elements must be appropriately coded to establish a relationship between files for the purpose of deriving information for analytical purposes. An example of this situation is Section Identification (element 201) listed in this section of the Dictionary which, in conjunction with the Course Number (element 004) and Subject Field (element 002), must relate to the appropriate identifiers in both the Student and the Staff Related Elements Sections. These "linking" elements are identified in the comments column of the Dictionary.

In order to define each data element, the Dictionary provides (1) a number, (2) a title, (3) a description and (4) comments needed for further clarification. In addition, the publication indicates the anticipated utility of each element. These indications must be preliminary at this time since the Cost Exchange Procedures and the Planning Models are not yet completed.

Key to Columns Used in This Dictionary

Number Column -- Number for identification of specific elements with a structure to indicate category, as explained earlier. (The numbers are not intended to be a standard coding scheme).

Title Column -- A brief identification for the data element.

Comments Column -- Additional information as may be needed to further define the data element, justify its inclusion, or identify its relationship to other elements.

USES Columns:

HEGIS -- "X" in this column indicates that this element is needed for the compilation of information for the Higher Education General Information Survey (HEGIS report).

Level III -- Cost Exchange "X" in this column indicates that this element is likely to be needed for exchange of comparable cost information between participating institutions (associated with WICHE MIS Level III participation).

Level IV -- Models "P" in this column indicates that this element is likely to be needed for the WICHE MIS Resource Requirements Prediction Model (RRPM-1)

"F" in this column indicates that this element is likely to be needed for the WICHE MIS Student Flow Model.

"S" in this column indicates that this element is likely to be needed for a future WICHE MIS simulation model.

(This column is associated with WICHE MIS Level IV participation)

DATA ELEMENT DICTIONARY

COURSE RELATED ELEMENTS

Data Element Index

Alphabetical Index

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103	Joint Offering	10
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104	Program Identification	11
201	Section Identification	13
301	Section Instruction Type	13
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302	Weekly Contact Hours	13

Cost Exchange (Level III)

101	Course Level	10
004	Course Number	9
003	HEGIS Discipline Speciality	9
303	Instructor Identification	14
304	Meeting Days	14
306	Meeting Place	14
305	Meeting Time	14
001	Organizational Unit	8
104	Program Identification	11
201	Section Identification	13
301	Section Instruction Type	13
308	Special Section Identification	15
302	Weekly Contact Hours	13

DATA ELEMENT DICTIONARY

COURSE RELATED ELEMENTS

Data Element Index

Models (Level IV)

Number	Name	Model	Page
101	Course Level	FP	10
004	Course Number	FP	9
003	HEGIS Discipline Specialty	FP	9
303	Instructor Identification	P	14
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001	Organizational Unit	FP	8
104	Program Identification	P	11
201	Section Identification	FP	13
301	Section Instruction Type	P	13
002	Subject Field	FP	9

COURSE RELATED ELEMENTS

NUMBER	TITLE	DESCRIPTION	COMMENT	USES		
				HEGIS	LEVEL III COST EXCHANGE	LEVEL IV MODELS
001	Organizational Unit	Institutional code for the academic organizational unit offering a course. Includes an institutional abbreviation for the unit.	This data element is a linking element used to associate organizational unit data with other sections of the DATA ELEMENT DICTIONARY. The code should be structured to identify the organizational entity within the institutional hierarchy, i.e. campus; school/college or major administration unit; academic or administrative department or institute.		X	FP

NUMBER	TITLE	DESCRIPTION	COMMENT	USES		
				HEGIS	LEVEL III COST EXCHANGE	LEVEL IV MODELS
002	Subject Field	Institutional code for subject field. Includes an institutional abbreviation for the field.	This code should be translatable to the HEGIS Taxonomy. See linking note on Course Number (element 004).			FP
003	HEGIS Discipline Division and Specialty	Corresponding HEGIS Code for a Subject field.		X	X	FP
004	Course Number	Official institutional number to uniquely identify a course within a subject field.	This element, in conjunction with Subject Field, is a linking element to other sections of the DATA ELEMENT DICTIONARY.		X	FP

NUMBER	TITLE	DESCRIPTION	COMMENT	USES		
				HEGIS	LEVEL III COST EXCHANGE	LEVEL IV MODELS
101	Course Level	The level of the instructional offering of this course: a) Preparatory b) Lower division (Freshman & Sophomore) c) Upper division (Junior & Senior) d) Upper division and graduate e) Graduate (Master and first professional, doctoral and second professional, combined master and doctoral) f) Other.	If this information is derivable from the structure of the course number, maintenance as a separate element is unnecessary.		X	FP
102	Course Title	The official title for a course as it appears in the institutional catalog.				
103	Joint Offering	A means of identifying single courses offered under multiple course numbers or under the auspices of multiple organizational units.				

COURSE RELATED ELEMENTS

NUMBER	TITLE	DESCRIPTION	COMMENT	USES		
				HEGIS	LEVEL III	LEVEL IV
					COST EXCHANGE	MODELS
104	Program Identification	A code to identify the program through which the course is offered: a) Regular instruction b) Special session instruction c) Extension instruction d) Experimental instruction.	See WICHE MIS Program Classification Structure for detailed definition.		X	P
105	Credit	The amount of credit offered for a course.	For variable credit courses, this data element should indicate the range of credits.			
106	Credit Base	Term credit hours used by the institution; i.e. quarter, semester.				

NUMBER	TITLE	DESCRIPTION	COMMENT	USES		
				HEGIS	LEVEL III COST EXCHANGE	LEVEL IV MODELS
107	Grading Method	Permissible Grading Systems within the course such as: a) A - F b) Pass - Fail c) Other.				
108	Number of Weeks Offered	Identification of the number of academic weeks a course of instruction is offered.	This element should be utilized only for courses which meet for other than the normal term of the institution.			
109	Former Course Identification	Organizational Unit, subject field and course number that previously identified this same course.				

NUMBER	TITLE	DESCRIPTION	COMMENT	USES		
				HEGIS	LEVEL III	LEVEL IV
					COST EXCHANGE	MODELS
201	Section Identification	A unique identifier for each section offered within a course.	This element, in conjunction with the Course identification elements, links to the Staff Related Elements section and to the Student Related Elements section.		X	FP
301	Section Instruction Type	Type(s) of section(s). Institutional instruction types should be translatable to: a) Lecture b) Laboratory c) Recitation/Discussion d) Seminar e) Thesis/Independent Study f) Activities/Performance.	Institutions may have additional instruction types such as discussion, quiz, etc. however, these instruction types should aggregate or translate to the categories shown in the description. A particular course may be offered in multiple sections of different instruction types requiring enrollment in each type i.e. a lecture associated with a series of laboratories.		X	P
302	Weekly Contact Hours	Number of hours per week, per student this section meets.			X	

NUMBER	TITLE	DESCRIPTION	COMMENT	USES		
				HEGIS	LEVEL III COST EXCHANGE	LEVEL IV MODELS
303	Instructor Identification	Social security number (or Institutional employee number) and name of the responsible instructor(s).	This element provides a link to the Staff Related Elements for analysis purposes. In the case of multiple instructors in one section care must be taken to allocate time of each instructor.		X	P
304	Meeting Days	The days of the week the section meets.			X	P
305	Meeting Time	The beginning and ending clock hours for the meeting periods of the section.	Normally the ending time is unnecessary if a section meets for the institutional standard class time period, e.g. 50 minutes.		X	P
306	Meeting Place	The building and room number where the section meets.	The meeting place is a linking element to the Facilities Related Elements where building and room are described.		X	P

NUMBER	TITLE	DESCRIPTION	COMMENT	USES		
				HEGIS	LEVEL III	LEVEL IV
					COST EXCHANGE	MODELS
307	Section Size	The section size desired by the academic unit offering the course.	This is a policy variable not necessarily based on capacity.			
308	Special Section Identification	An identifier to indicate that this section of a course is a special section, i.e. honors or preparatory.			X	
309	Special Facilities Requirements	A series of elements indicating special facilities requirements for this section, e.g.: a) Special Laboratory b) Audio Visual Equipment c) Television (closed circuit) d) Computer based.	This element should correspond to special characteristics maintained about facilities.			

APPENDIX A

Development of the DATA ELEMENT DICTIONARY

All sections of the DATA ELEMENT DICTIONARY were developed in cooperation with the WICHE MIS Data Element Task Force. The members of the Data Element Task Force are listed below:

Name and Position	Institution/agency
Mr. J. Spencer Carlson Director, Office of Student Services	University of Oregon
Mr. Roger M. Emanuel Coordinator, Models and Simulation	University of California
Mr. James Farmer Director, Information Systems	California State Colleges
Dr. Parker Fowler ADP Systems Coordinator	Colorado Commission on Higher Education
Mr. R. Keith Martin Director, Management Systems Department	University of Washington
Dr. Keith Smith (Dec. 1968 to Aug. 1969) Associate Director	Board of Higher Education State of Illinois
Mr. David Nyman (Sep. 1969 - Present) Assistant Director for Data Systems	Board of Higher Education State of Illinois
Mr. George J. Turner Director of Information Systems	University of California

In addition to the efforts of the Data Element Task Force, the WICHE MIS Analytical Studies Task Force also reviewed each section of the DATA ELEMENT DICTIONARY. This group has responsibility for conceptualizing the models and formulae which will use the basic data elements to produce derived data and information important for institutional management. Members of the Analytical Studies Task Force are listed below:

Name and Position	Institution/agency
Dr. Robert Adams Professor of Economics	University of California at Santa Cruz
Mr. James Farmer Director, Information Systems	The California State Colleges
Mr. John Keller Director of Analytical Studies	University of California
Dr. Thomas Mason Director of Institutional Research	University of Colorado
Mr. M. Charles McIntyre Principal Higher Education Specialist	Coordinating Council for Higher Education California
Mr. Gordon Osborn Director of Analytical Studies	State University of New York
Mr. Garland Peed Assistant Superintendent, Business	State Center Junior College District California
Mr. James Ryan Vice President for Planning and Budgeting	University of Washington
Dr. Martin Zeigler Associate Provost	University of Illinois

Each section of the DATA ELEMENT DICTIONARY was published and distributed in preliminary draft form. The fourteen participating states held reviews of the preliminary draft with institutions in their state. The state representatives then met for a regional review to summarize comments

on the Dictionary. The fourteen state representatives for the regional review of the Course Related Elements section were:

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APPENDIX B

Comments on File Structure

Some educators have expressed concern that the development and widespread use of uniform data systems will destroy institutional autonomy with regard to coding and file structure. The WICHE MIS Program is designed to allow institutional autonomy in such matters and, at the same time, to make it possible to derive data which will be truly comparable for interinstitutional comparisons. WICHE has published a technical report entitled, "Concepts Underlying Compatibility[1]," which specifically speaks to this point.

In so far as this section of the DATA ELEMENT DICTIONARY is concerned, the elements are listed without reference to how they should be stored in a data system. No attempt has been made to define standard codes, field formats, or file structures, and the listing of items in this section of the Dictionary is in no way meant to imply that these elements necessarily must be kept in a specific file.

The major purpose of collecting some of the data elements included in this section of the Dictionary is to obtain longitudinal data depicting changes in characteristics over a period of time. For this reason, several of the elements will have to be stored in historical files as updated versions of the elements are collected. The precise method of storage for such historical data is considered by WICHE to be an institutional prerogative. It is only necessary that institutions participating at the various levels be able to produce the required longitudinal data when the need arises.

The WICHE MIS Program anticipates further publications dealing with suggested code structures and file formats to aid institutions on the threshold of the development of data systems.

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[1]Dr. Ben Lawrence, "The Concepts Underlying Compatibility in the WICHE Management Information Systems Program," Compatible Management Information Systems. Boulder, Colorado: Western Interstate Commission for Higher Education May, 1969.